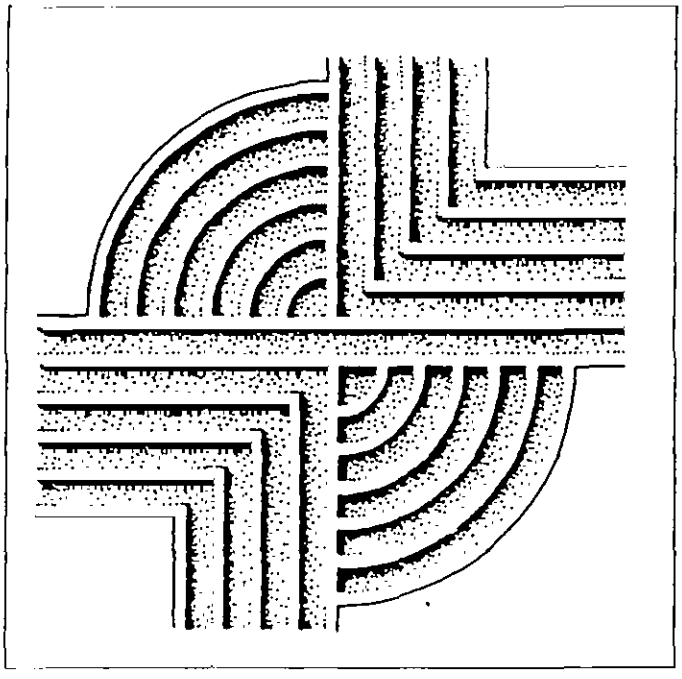
AN INTENSIVE ARCHAEOLOGICAL SURVEY OF THE ASHLEY HILL NORTH TRACT FOR THE EXPANSION OF MIDDLETON INN, DORCHESTER AND CHARLESTON COUNTIES, SOUTH CAROLINA



CHICORA RESEARCH CONTRIBUTION 215

AN INTENSIVE ARCHAEOLOGICAL SURVEY OF ASHLEY HILL NORTH TRACT FOR THE EXPANSION OF MIDDLETON INN, DORCHESTER AND CHARLESTON COUNTIES, SOUTH CAROLINA

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CHICORA RESEARCH CONTRIBUTION 215

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ABSTRACT

This study presents the results of an intensive archaeological survey of 30 acres located on the south bank of the Ashley River on SC 61 approximately 12 miles northwest of Charleston, South Carolina. Approximately 65% of the survey tract lies in Dorchester County with the remaining 35% in Charleston County, South Carolina. The purpose of this investigation was to locate any archaeological sites which may exist within the survey tract and evaluate them for their eligibility for inclusion on the National Register of Historic Places.

Examination of the site files housed at the South Carolina Institute of Archaeology and Anthropology indicated that there were no previously recorded sites within the survey tract. An inquiry was made to the South Carolina Department of Archives and History for any previous architectural surveys or the presence of any National Register properties, sites, districts, or objects. It was determined that the entire survey tract lay in the both the Ashley River Historic District as well as being partially contained within the boundaries of Middleton Place, A National Historic Landmark (NHL).

As a result of these investigations, one site 38DR184, was identified on the study tract and one feature, not assigned a site number, was observed.

Archaeological site 38DR184 represents a multi component eighteenth through twentieth century subsurface deposit. As a consequence of these investigations, site 38DR184 is recommended as not eligible for inclusion on the National Register of Historic Places, pending the concurrence of the State Historic Preservation Office. The observed feature is in the form of a circular depression. Although similar in shape to the central depression found in colonial period tar kilns, no artifacts associated with this feature were recovered during the survey.

As always, it is possible that additional, but unidentified, resources may exist on the survey tract. Consequently, Sabine and Waters, Inc. and Middleton Inn are cautioned that if any archaeological or historical remains are identified during any future construction, all work should immediately cease and the identified remains should be reported to either Chicora Foundation or the State Historic Preservation Office.

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCTION

This survey was conducted by Mr. William B. Barr of Chicora Foundation, Inc. for Mr. Ken Smoak of Sabine and Waters, Inc. The project area is located in northwest Charleston County and southeast Dorchester County, approximately 12 miles northwest of Charleston, South Carolina (Figure 1). The survey tract is bordered to the east by the Ashley River, to the south by the Middleton Inn riding and hunting stables, to the east by Ashley River Road (SC 61), and to the north by Rice Mill Creek which feeds the mill pond at Middleton Place plantation and gardens. The northeastern portion of the survey tract contains the Middleton Inn (Figure 2).

Topography in the project area consists of gentle to moderately sloping terrain along with open areas, fenced pasture, and wooded areas (Figure 3). Although there is a gradual slope from Ashley River Road (SC61) to the bluff area, a moderate to extreme slope exists from the bluff edge west to the river bank. The central portion of the survey tract is bisected by a drainage which flows north toward Rice Mill Creek (Figure 4). The area east of the drainage drops abruptly to the creek bed, whereas the area west of the drainage tumbles down from the bluff ridge. Middleton Inn and grounds lie along the top of the ridge, at the edge of the Ashley River.

The project area is currently proposed for the expansion of the Middleton Inn complex. As a result, we anticipate potential disturbance from clearing and grubbing, grading, construction of utilities, as well as the construction of a new wing on the Inn. This work has the potential to seriously damage any archaeological remains which may exist on the property.

This study was initiated to provide a detailed explanation of possible archaeological resources within the 30 acre tract. Specifically, the study was intended to:

- locate historical and archaeological remains which may exist on the tract, and
- to determine how deep distubances in the area are and the likelihood that they may have affected cultural resources.

Chicora received a request for a budgetary proposal, for an intensive archaeological survey from Mr. Ken Smoak of Sabine and Water,s Inc. on January 3, 1997. Our proposal, dated January 3, 1997, was accepted on January 27, 1997.

Ms. Rachel Brinson-Marrs examined the site files of the South Carolina Institute of Archaeology and Anthropology and no sites have been previously identified on the Ashley Hill north tract. A project area map was faxed to Dr. Tracy Powers of the S.C. Historic Preservation Office on January 29, 1997, with a request for information on any previous architectural surveys or the presence of any National Register sites, districts, properties or objects in the project area. We were informed that the project area lay within the National Register District for the Ashley River Historic District (Figure 5). In addition, the areas north and south of the survey tract were included as a portion of the National Historic Landmark (NHL) for Middleton Place (Figure 6).

The field investigations were undertaken by Chicora Foundation, Inc. by Chicora Research Archaeologist Mr. William B. Barr and archaeologist technician Mr. John D. Hamer on February 17, 1997. The report preparation took place at Chicora Foundation's offices in Columbia on February 19, 1997.

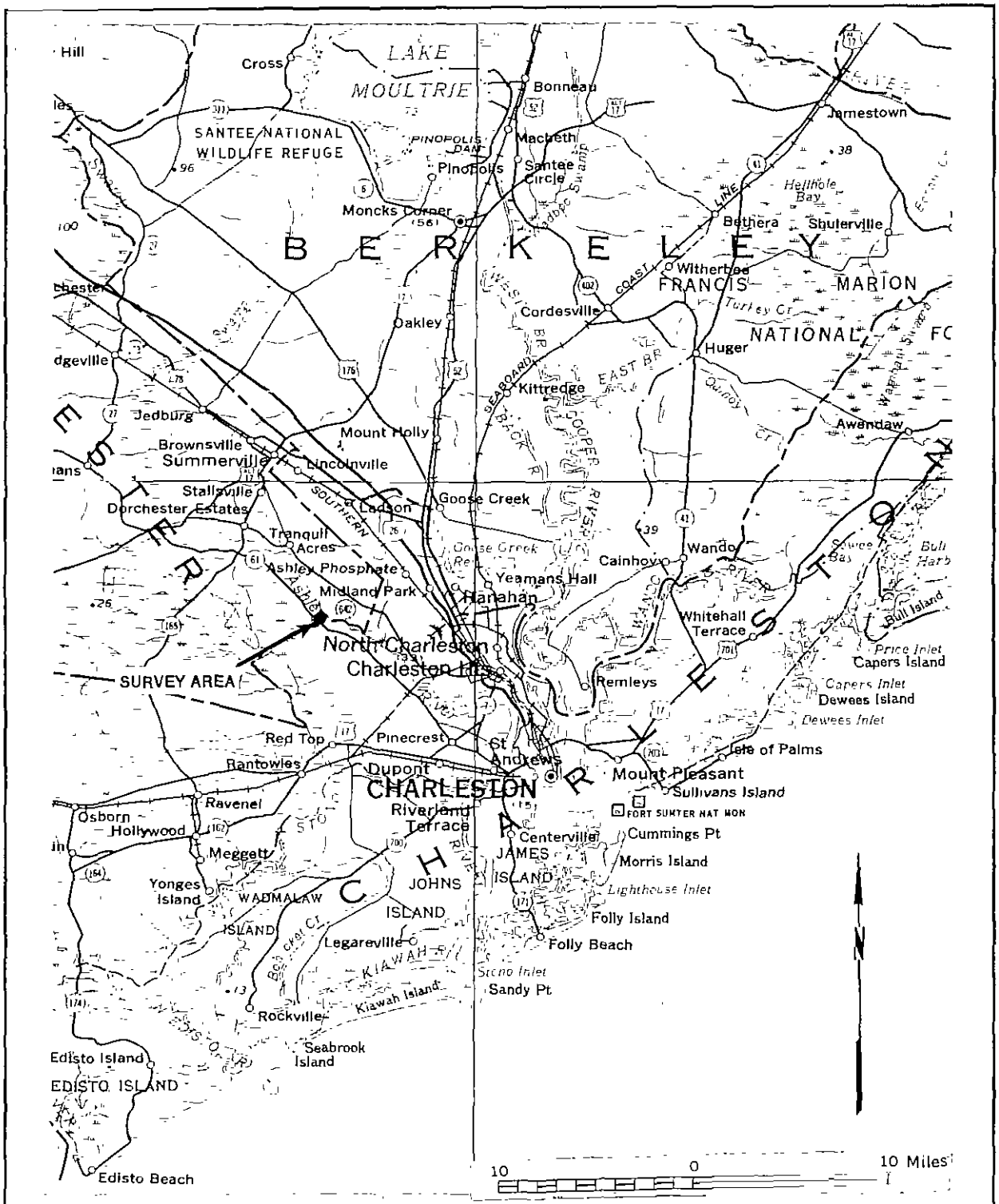

Figure 1. Location of the Ashley Hill north tract survey area in the Dorchester and Charleston county area (base map is USGS South Carolina, 1970, 1:500,000).

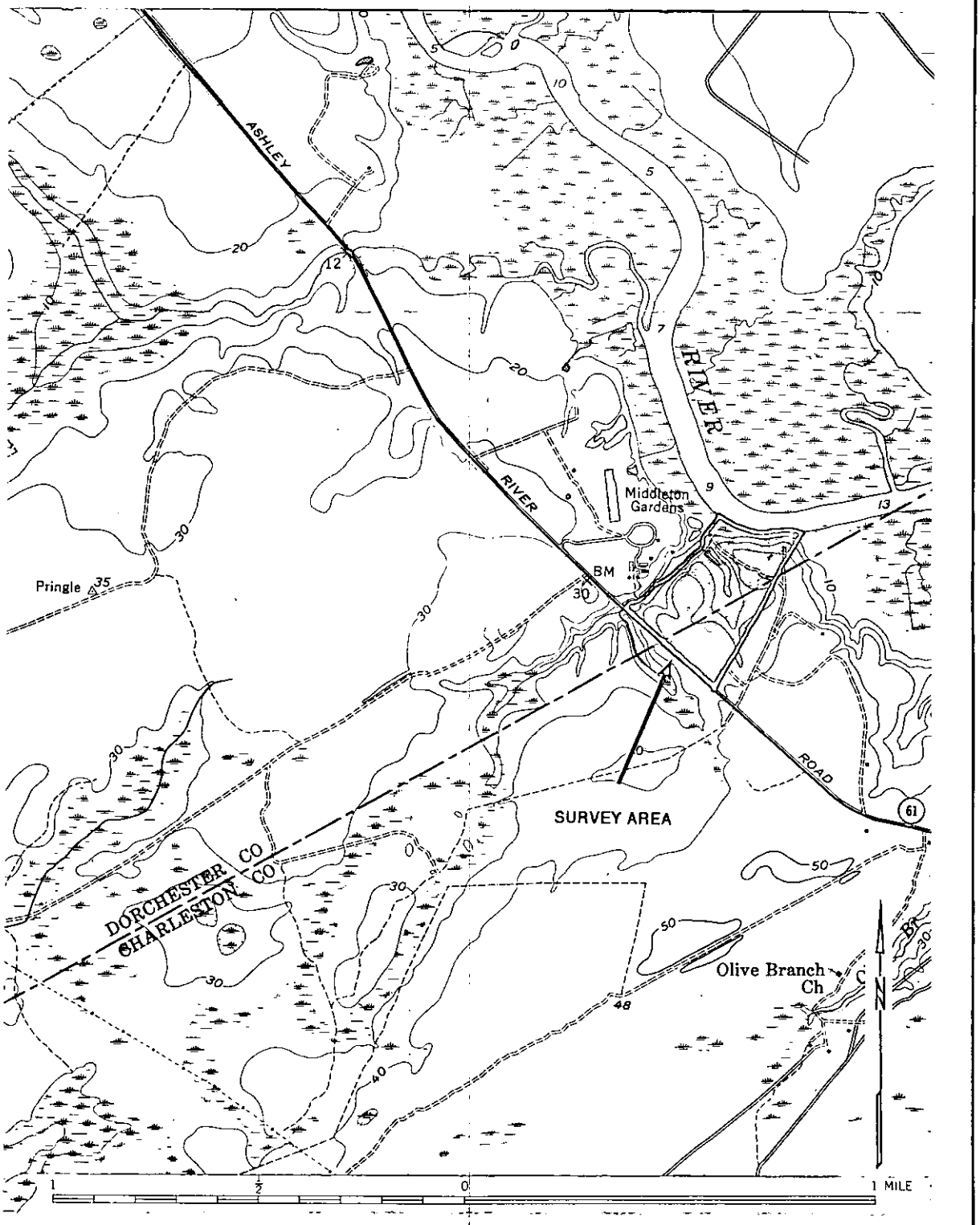

Figure 2. Ashley Hill north tract project area (base map is USGS Stallsville, 1957PR71,1:24,000).

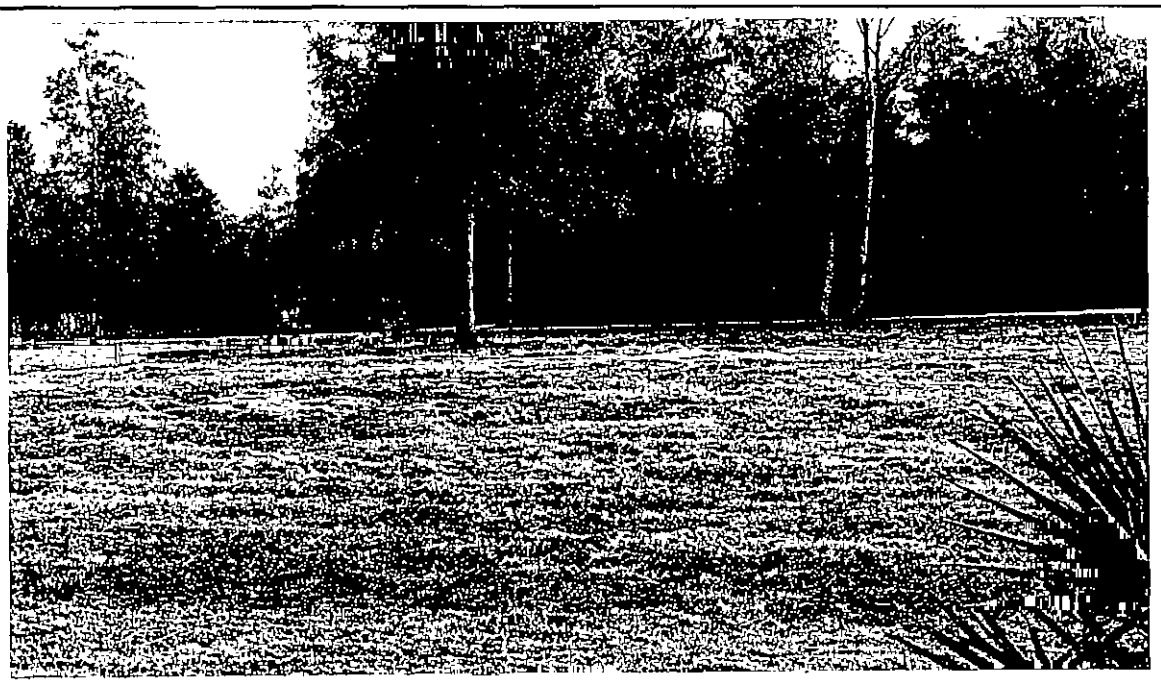

Figure 3. Northwest section of Ashley Hill north tract, typical topography and vegetation, view to the south.

Figure 4. Central drainage of Ashley Hill north tract, view to the north.

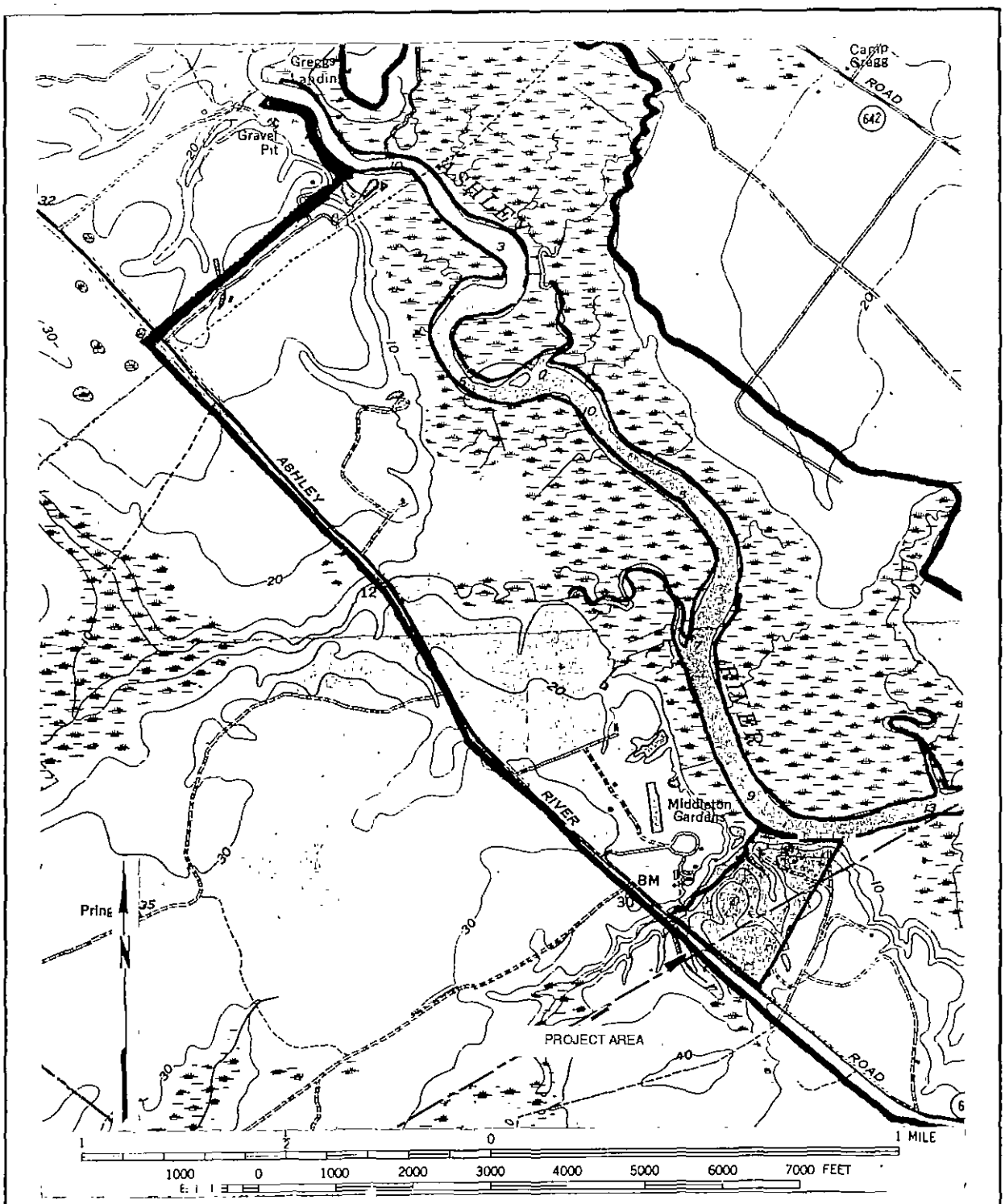

Figure 5. General map of the Ashley River Historic District (courtesy of the South Carolina Department of Archives and History).

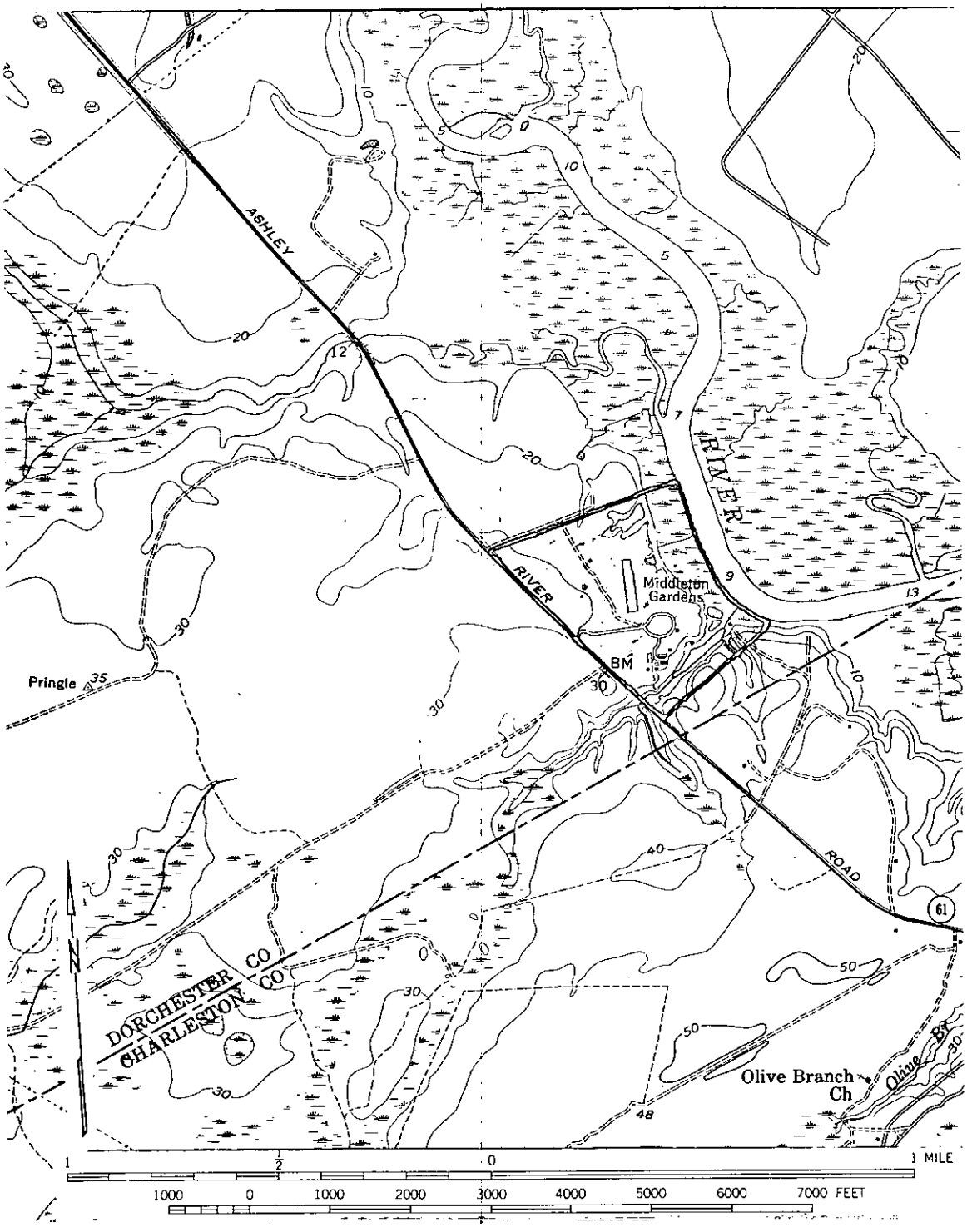

Figure 6. General map of the Middleton Place National Historic Landmark boundaries (courtesy of the South Carolina Department of Archives and History).

NATURAL ENVIRONMENT

Dorchester and Charleston counties are located in the lower Atlantic Coastal Plain of South Carolina and are bounded to the east by the Atlantic Ocean and a series of marsh, barrier, and sea islands (Mathews et al. 1980:133). Elevations in Dorchester county range from 4 feet above mean sea level (AMSL) in the southeast to about 120 feet (AMSL) in the northwest. Elevations in Charleston County range from sea level in the east to about 70 feet (AMSL) in the west.

Three major drainages are found in Dorchester county. These include the northwestern portion of the Ashley and the Edisto river's. Both contain fresh water flow in Dorchester County. The Ashley River bisects the southeast portion of the county, whereas the Edisto River forms the southern boundary. Four Hole Swamp forms the northern boundary. There are seven major drainages found in Charleston County. Four of these, the Wando, Ashley, Stono, and North Edisto, are dominated by tidal flows and are saline. The three with significant fresh water flow are the Santee, forming the northern boundary of the County, the South Edisto, forming the southern boundary, and the Cooper, which bisects the County. Because of the low topography, many broad, low-gradient drains are present as either extensions of the tidal rivers or as flooded bays and swales. Examples of these are present at the site, and include small sloughs and marsh along the bluff edge.

The project area is situated entirely between Ashley Ferry Road to the west and the banks of the Ashley River to the east. North of the survey tract lies Middleton Place Plantation and Gardens. To the south is a residential settlement associated with Middleton Inn. The location and topography is similar to that of other colonial period plantations which tended to be located in areas of deep water and high ground (South and Hartley 1980).

Located on a bluff west of the Ashley River the project elevations range from about 30 feet (AMSL) to the northeast to 10 feet (AMSL) to the south and east (Figure 3). In general, the topography slopes to the east toward the ridge over looking the low marsh of the Ashley River.

Geology and Soils

Coastal Plain geological formations are unconsolidated sedimentary deposits of very recent age (Pleistocene and Holocene) lying on ancient crystalline rocks (Cooke 1936; Miller 1971:74). The Pleistocene sediments are organized into topographically distinct, but lithologically similar, geomorphic units, or terraces, parallel to the coast. The project area is identified by Cooke (1936) as part of the Pamlico terrace, which includes the land between the recent shore and an abandoned shore line about 25 feet AMSL. Cooke (1936:7) notes that evidence of ancient beaches and swales can still be seen in the Pamlico formation and this likely contributed to the ridge and trough topography present in much of the area.

Within the coastal zone the soils are Holocene and Pleistocene in age and were formed from materials that were deposited during the various stages of coastal submergence. The formation of soils in the study area is affected by this parent material (primarily sands and clays), the temperate climate, the various soil organisms, topography, and time.

The mainland soils are Pleistocene in age and tend to have more distinct horizon development and diversity than the younger soils of the sea and barrier islands. Sandy to loamy soils predominate in the level to gently sloping mainland areas. The island soils are less diverse and less well developed, frequently lacking a well-defined B horizon. Organic matter is low and the soils tend to be acidic. The Holocene deposits typical of barrier islands and found as a fringe on some sea islands, consist almost entirely of quartz sand which exhibits little organic matter. Tidal marsh

soils are Holocene in age and consist of fine sands, clay, and organic matter deposited over older Pleistocene sands. The soils are frequently covered by up to 2 feet of saltwater during high tides. Historically, marsh soils have been used as compost or fertilizer for a variety of crops, including cotton (Hammond 1884:510) and Allston mentions that the sandy soil of the coastal region, "bears well the admixture of salt and marsh mud with the compost" (Allston 1854:13).

Four soil series occurs in the project area. These include the Lakeland series, the Leon series, the Seabrook series, and the Wando series. The Lakeland series consists of excessively well drained sands which exhibit an A horizon of dark grayish brown (10YR 3/2) loamy sand to a depth of 0.6 foot. The C horizon is a brown (7.5YR 5/4) loamy sand to 2.9 feet below surface. The Leon series A horizon consists of poorly drained fine sand which is very dark grayish brown (10YR 3/1) to a depth of 0.9 foot. These overlay approximately 1.0 feet of a dark reddish brown (10YR 2/2) C horizon or subsoil. The Seabrook series consists of an A horizon of well drained loamy fine sand which is very dark grayish brown (10YR 3/2) to 0.8 foot in depth. This is followed by a multiple C horizon of dark brown (10YR 4/3) sand to 1.0 feet and a brownish-yellow (10YR 6/6) subsoil to 3.8 feet in depth. The Wando series consists of excessively well drained to well drained loamy sand that typically exhibit an A horizon of very dark brown (10YR 4/3) surface layer to 0.7 foot in depth. This is typically followed by a C horizon of brown (7.5YR 5/4) to strong-brown (7.5YR 5/6) loamy fine sand to a depth of 4.6 feet. Approximately 80% of the survey tract consisted of Wando loamy sand.

A great deal of turbation, deflation, and deposition is exhibited by the soils in the project area. Some areas, such as the pastures and corrals in the western portion of the tract are inverted, i.e. the C horizon lies on top of the A. Near the Middleton Inn complex to the east, the A horizon is deflated by 0.4 foot. Along the central drainage the A horizon exceeds the profile for the Seabrook and Leon series by approximately 1.35 feet. The various roads and trails within the Middleton Inn complex contain an A horizon of approximately 0.7 foot of gray (10YR 5/1) sandy loam. These soils tend to represent other soil series, such as the C horizon from the Capers series, which do not normally exist within the survey tract.

Climate

John Lawson, who tended to romanticize Carolina, described South Carolina in 1700 as having, "a sweet Air, moderate Climate, and fertile Soil" (Lefler 1967:86). In December 1740 Robert Pringle remarked that Charleston was having "hard frosts & Snow" characterized as "a great Detriment to the Negroes" (Edgar 1972:282), while in May 1744 Pringle states, "the weather having already Come in very hott" (Edgar 1972:685).

The major climatic controls of the area are latitude, elevation, distance from the ocean, and location with respect to the average tracks of migratory cyclones. Charleston's latitude of 32°37'N places it on the edge of the balmy subtropical climate typical of Florida, further south. As a result, there are relatively short, mild winters and long, warm, humid summers. The large amount of nearby warm ocean water surface produces a marine climate, which tends to moderate both the cold and hot weather. The Appalachian Mountains, about 220 miles to the northwest, block the shallow cold air masses from the northwest, moderating them before they reach the sea islands (Matthews et al. 1980:46).

The average high temperature in the Charleston in July is 81°F, although temperatures are frequently in the 90s during much of July (Kjerfve 1975:C-4). Mills noted:

> in the months of June, July, and August, 1752, the weather in Charleston was warmer than any of the inhabitants before had ever experienced. The mercury in the shade often rose above 90°, and for nearly twenty successive days varied between that an 101° (Mills 1972:444).

The area normally experiences a high relative humidity, adding greatly to the discomfort. Kjerfve

(1975:C-5) found an annual mean value of 73.5% RH, with the highest levels occurring during the summer. Pringle remarked in 1742 that guns "sufferr'd with the Rust by Lying so Long here, & which affects any Kind of Iron Ware, much more in this Climate than in Europe" (Edgar 1972:465).

The annual rainfall in this portion of Charleston is about 49 inches, fairly evenly spaced over the year. While adequate for most crops, there may be periods of both excessive rain and drought. The Charleston area has recorded up to 20 inches of rain in a single month and the rainfall over a three month period has exceeded 30 inches no less than nine times in the past 37 years. Likewise, periods of draught can occur and cause considerable damage to crops and livestock. Mills remarks that the "Summer of 1728 was uncommonly hot; the face of the earth was completely parched; the pools of standing water dried up, and the field reduced to the greatest distress" (Mills 1972:447-448). Another significant historical drought occurred in 1845, affecting both the Low and Up Country.

The annual growing season is 295 days, one of the longest in South Carolina. This mild climate, adequate rainfall, and long growing season, as Hilliard (1984:13) notes, is largely responsible for the presence of many southern crops, such as cotton and sugar cane.

Floristics

The area of the study tract exhibits two major ecosystems: the maritime forest ecosystem which consists of the upland forest areas, and the estuarine ecosystem of deep water tidal habitats (Sandifer et al. 1980:7-9).

The maritime forest ecosystem has been found to consist of five principal forest types, including the Oak-Pine forests, the Mixed Oak Hardwood forests, the Palmetto forests, the Oak thickets, and other miscellaneous wooded areas (such as salt marsh thickets and wax myrtle thickets).

Of these the Oak-Pine forests are most common, constituting large areas of Charleston's original forest community. In some areas palmetto becomes an important sub-dominant. Typically these forests are dominated by the laurel oak with pine (primarily loblolly with minor amounts of longleaf pine) as the major canopy co-dominant. Hickory is present, although uncommon. Other trees found are the sweet gum and magnolia, with sassafras, red bay, American holly, and wax myrtle and palmetto found in the understory.

Mills, in the early nineteenth century, remarked that:

> South Carolina is rich in native and exotic productions; the varieties of its soil, climate, and geological positions, afford plants of rare, valuable, and medicinal qualities; fruits of a luscious, refreshing, and nourishing nature; vines and shrubs of exquisite beauty, fragrance, and luxuriance, and forest trees of noble growth, in great variety (Mills 1972:66).

The loblolly pine was called the "pitch or Frankincense Pine" and was used to produce tar and turpentine; the longleaf pine was "much used in building and for all other domestic purposes;" trees such as the red bay and red cedar were often used in furniture making and cedar was a favorite for posts; and live oaks were recognized as yielding "the best of timber for ship building;" (Mills 1972:66-85). Mills also observed that:

> in former years cypress was much used in building, but the difficulty of obtaining it now, compared with the pine, occasions little of it to be cut for sale, except in the shape of shingles; the cypress is a most valuable wood for durability and lightness. Besides the two names we have cedar, poplar, beech, oak, and locust, which are or may be also used in building (Mills 1972:460).

The "Oak and hickory high lands" according to Mills were, "well suited for corn and

provisions, also for indigo and cotton" (Mills 1972:443). The value of these lands in the mid-1820s was from $10 to $20 per acre, less expensive than the tidal swamp or inland swamp lands (where rice and, with drainage, cotton could be grown).

Today, it is obvious that the survey area has undergone a great deal of landscape modification. Two main forest areas still exist within the project area. These would include the central drainage for Rice Mill Creek and the northern section of the survey tract which abuts Rice Mill Creek, as well as those areas east of the Middleton Inn complex which lay along the Ashley River. The central and northern portions of the tract contain a variety of oak, magnolia, and small loblolly pine along with a dense understory. The areas along the river contain cypress, oak, and pine along with an understory of oak, pine, and palmetto. The remaining portions of the project area have been clear cut and seeded for pasture and the construction of horse pens.

The estuarine ecosystem in the vicinity includes those areas of deep water tidal habitats and adjacent tidal wetlands. Salinity in these areas may range from 0.5 parts per thousand (ppt) at the head of an estuary to 30 ppt where it comes into contact with the ocean. Estuarine systems are influenced by ocean tides, precipitation, fresh water runoff from the upland areas, evaporation, and wind. The system may be subdivided into two major components: subtidal and intertidal (Sandifer et al. 1980:158-159). With the salinity level in the Ashley River generally considered too high for the tidal marshlands to be used for rice cultivation or other forms of agriculture, no agriculturally induced alterations were anticipated in the survey tract.

BACKGROUND RESEARCH

Previous Research

There are a number of previously published archaeological studies available for the Charleston area to provide background (see Derting et al. 1991 for references to research in the Charleston area). There should hardly be any need to do more than point the interested reader in one or two directions for additional information and details. Simple, and readily available, summaries include *A Short History of Charleston* (Rosen 1982) and *Charleston! Charleston!* (Fraser 1989).

A considerable amount of research has been conducted throughout the Ashley River District (Lewis and Hardesty 1979, Amer et al. 1993, Barker 1993, Trinkley 1993a, 1993b, Barr 1995, Harris 1996). While the work of Lewis and Hardesty (1979), Hartley and Peterson (38DR85 and 38DR86 site form, South Carolina Institute of Archaeology and Anthropology, University of South Carolina,), and Trinkley (1993a, 1993B) has centered on specific locations at Middleton Place. Other studies of Ashley River life have been conducted by Amer (1993) on eighteenth century trading vessels; Barker (1993), at the Town of Old Dorchester; Barr (1995) at Ashley Ferry; and Harris (1996) on nineteenth century shipping.

The Ashley River Historic District was created in 1994 (see Figure 5). The southwest boundary of the district is formed by Ashley Ferry Road. The northeast boundary generally follows the marshline of the Ashley River. The southeast boundary is formed by the Seaboard Coast Line railroad bridge just west of Ashley Ferry, and the northwestern boundary is formed by Old Dorchester State Park. Middleton Place was accepted for inclusion as a National Historic Landmark in 1971 (see Figure 6). The site boundaries, including the main homesite for Authur Middleton and an number of ancillary buildings, which cover approximately 110 acres.

Ken Lewis and Donald Hardesty (1979), during investigations at Middleton Place, surveyed the main plantation complex. This included the remains of the main house, its eastern flanker, as well as the stables and gardens.

In 1984 two surveys were conducted by Michael Hartley and Jolee Peterson. These included a pedestrian survey of the "Mr. Fuller" property, which lies east of the survey tract, and the "Mr. Cattle" property, which lies to the west. Both were recorded at the South Carolina Institute of Archaeology and Anthropology in January of 1984. Site 38DR85, west of the survey tract, is located just to the north of Rice Mill Creek and just south of Ashley Ferry Road (SC61), (38DR85 site form, South Carolina Institute of Archaeology and Anthropology, University of South Carolina). This location was initially discovered by Lewis in 1984 and is thought to represent the remains of Mr. Fuller's homesite. Site 38DR86, south of the survey tract, west of the Ashley River, and east of Ashley Ferry Road (SC61), evidenced the remains of a brick structure and phosphate mining activities (38DR86 site form, South Carolina Institute of Archaeology and Anthropology, University of South Carolina). This is thought to be the remains of Mr. Cattle's home. No subsurface testing was conducted during these investigations and no artifacts were collected.

In 1993 Trinkley investigated the rice mill and its associated structures located at Middleton Place (Trinkley 1993a, 1993b). Site 38DR16 contains the rice mill structure, the mill race, associated industrial equipment, and associated trash deposits (38DR16 site form, South Carolina Institute of Archaeology and Anthropology, University of South Carolina). The structure dated from the antebellum period, as evidenced from the presence of whiteware ceramics, and has been altered a number of times. This has been confirmed through historical investigations, as well.

Prehistoric Synopsis

Several previously published archaeological studies are available for the prehistory of the Dorchester and Charleston county area that provide additional background. These include Butler (1994:8-18) and Trinkley (1980). As well, several overviews are available concerning the prehistoric and protohistoric occupation of the Carolina's and Georgia may be found in the works of Sassaman and Anderson (1994) for the Middle and Late Archaic and Anderson et al. (1992) for the Paleoindian. For those requiring a more generalized synthesis, perhaps the most readable and well balanced is that offered by Judith Bense (1994), Archaeology of the Southeastern United States: Paleoindian to World War I.

The Paleoindian Period, lasting from 12,000 to perhaps 8,000 B.C., is evidenced by basally thinned, side-notched projectile points; fluted, lanceolate projectile points; side scrapers; end scrapers; and drills (Coe 1964; Michie 1977; Williams 1968). The Paleoindian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages, which Michie interprets to support the concept of an economy "oriented towards the exploitation of now extinct mega-fauna" (Michie 1977:124).

The Archaic Period, which dates from 8000 to about 1000 B.C., does not form a sharp break with the Paleoindian period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. The chronology established by Coe (1964) for the North Carolina Piedmont may be applied with relatively little modification to the South Carolina coast. Archaic period assemblages, characterized by corner-notched and broad stemmed projectile points, are rare in the Sea Island region, although the sea level is anticipated to have been within 13 feet of its present stand by the beginning of the succeeding Woodland period (Lepionka et al. 1983:10).

To some the Woodland Period begins, by definition, with the introduction of fired clay pottery about 2000 B.C. along the South Carolina coast. To others, the period from about 2500 to 1000 B.C. falls into the Late Archaic because of a perceived continuation of the Archaic lifestyle in spite of the manufacture of pottery. Regardless of the terminology, the period from 2500 to 1000 B.C. is well documented on the South Carolina coast and is characterized by Stallings (fiber-tempered) and Thom's Creek (sand or non-tempered) series pottery (Figure 7).

The subsistence economy during this early period on the coast of South Carolina was based primarily on deer hunting, fishing, and shellfish collection, with supplemental inclusions of small mammals, birds, and reptiles. Various calculations of the probable yield of deer, fish, and other food sources identified from shell ring sites such as Stratton Place near the project study tract and Lighthouse Point, also in Charleston County on James Island, indicate that sedentary life was not only possible, but probable. Toward the end of the Thom's Creek phase there is evidence of sea level change, and a number of small, non-shell midden sites are found along the coast. Apparently the rising sea level inundated the tide marshes on which the Thom's Creek people relied.

The succeeding Refuge phase, dating from about 1100 to 500 B.C., suggests fragmentation caused by the environmental changes (Lepionka et al. 1983; Williams 1968). Sites are generally small and some coastal sites evidence no shellfish collection at all (Trinkley 1982). Peterson (1971:153) characterizes Refuge as a degeneration of the preceding Thom's Creek series and a bridge to the succeeding Deptford culture.

The Deptford phase, which dates from 1100 B.C. to A.D. 600, is best characterized by fine to coarse sandy paste pottery with a check stamped surface treatment. Also present are quantities of cord marked, simple stamped, and occasional fabric impressed pottery. During this period there is a blending of the Deptford ceramic tradition of the lower Savannah with the Deep Creek tradition found further north along the South Carolina coast and extending into North Carolina (Trinkley 1983).

The Middle Woodland period (ca. 300 B.C. to A.D. 1000) is characterized by the use of

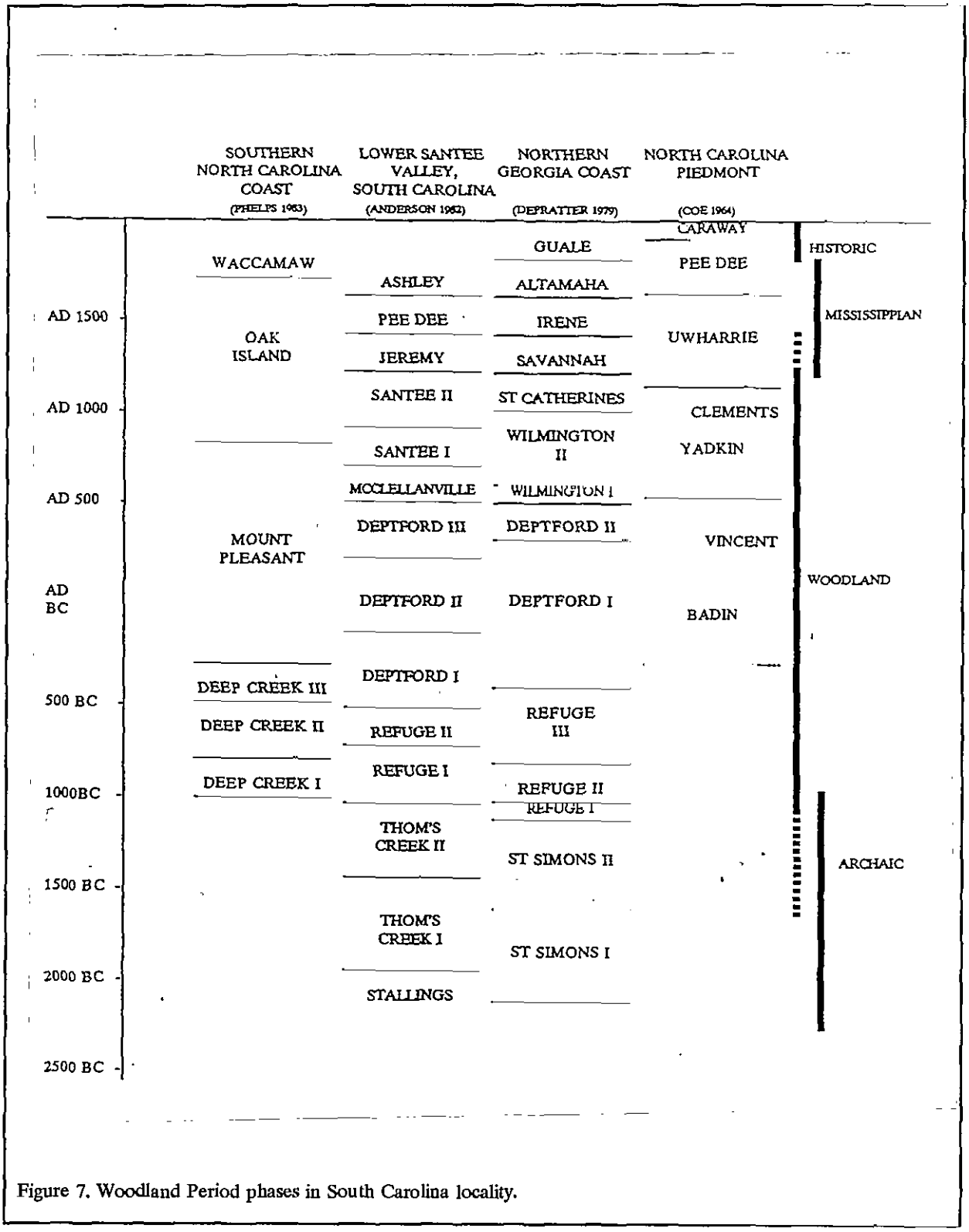

Figure 7. Woodland Period phases in South Carolina locality.

sand burial mounds and ossuaries along the Georgia, South Carolina, and North Carolina coasts (Brooks et al. 1982; Thomas and Larsen 1979; Wilson 1982). Middle Woodland coastal plain sites continue the Early Woodland Deptford pattern of mobility. While sites are found all along the coast and inland to the fall line, sites are characterized by sparse shell and few artifacts. Gone are the abundant shell tools, worked bone items, and clay balls. In many respects the South Carolina Late Woodland period (ca. A.D. 1000 to 1650 in some areas of the coast) may be characterized as a continuum of the previous Middle Woodland cultural assemblage.

The Middle and Late Woodland occupations in South Carolina are characterized by a pattern of settlement mobility and short-term occupations. On the southern coast they are associated with the Wilmington and St. Catherines phases, which date from about A.D. 500 to at least A.D. 1150, although there is evidence that the St. Catherines pottery continued to be produced much later in time (Trinkley 1981). On the northern coast there are very similar ceramics called Hanover and Santee.

The South Appalachian Mississippian period (ca. A.D. 1100 to 1640) is the most elaborate level of culture attained by the native inhabitants and is followed by cultural disintegration brought about largely by European disease. The period is characterized by complicated stamped pottery, complex social organization, agriculture, and the construction of temple mounds and ceremonial centers. The earliest coastal phases are named Savannah and Irene (A.D. 1200 to 1550). Sometime after the arrival of Europeans on the Georgia coast in A.D. 1519, the Irene phase is replaced by the Altamaha phase. Altamaha pottery tends to be heavily grit tempered, the complicated stamped motifs tend to be rectilinear and poorly applied, and check stamping occurs as a minority ware. Further north, in the Charleston area, the Pee Dee or Irene ware is replaced by pottery with bolder designs, thought to be representative of the protohistoric and historic periods (South 1972).

Although there has been very little archaeological exploration of historic period Native American groups in the Dorchester and Charleston area, South has compiled a detailed overview of the ethnohistoric sources (South 1972).

Historic Synopsis

The only historical synthesis of Middleton Place history is the brief description offered by Lewis and Hardesty (1979) as an introduction to their testing of the main plantation complex in 1979. As might be expected, their review concentrated on the main settlement and its ancillary structures, rather than various outparcels and consequently offers very little information useful to this study. We fortunately had the assistance of Ms. Barbara Doyle, Middleton Place's archivist, who allowed us access to a number of documents related to the history of the plantation and its holdings. Also, Lee Tippett of the SHPO office was quite helpful in the acquisition of maps and plats defining the survey tract location within any National Register districts or properties. While there are undoubtedly additional references and accounts available concerning Middleton Place, an in-depth historic overview was beyond the scope of these investigations.

The history of the project area coincides with the early establishment and expansion of the Carolina colony. Although a number of archaeological studies have been conducted near the survey tract, little is known of Ashley Hill, the overall development of the plantation, or of any structures, other than the main house, located there. While initially we anticipated some additional historic research would be necessary, it was found that the previous studies, especially Smith (1913, 1919), had exhausted a majority of the readily available primary and secondary sources. Consequently, historical research was limited to collecting copies of various referenced plats.

Colonial and Antebellum Ownership

The property of Ashley Hill (now included as part of the Middleton Inn survey tract) was first acquired by the first John Cattell on April 21, 1695 as part of a grant for 1050 acres on the south

(west) side of the Ashley River. Through a succession of family inheritances this property, in 1752, was devised to William Cattell the great-grandson of the John Cattell. It was this "William Cattell (Leuit. Col. William Cattell) [who] made Ashley Hill his residence (Smith 1988:192).

In 1785, after the death of William Cattell, the property was offered up for sale (Figure 8). Alexander Gillion, who purchased the 735½ acre tract February 15, 1785 renamed the plantation Batavia and took over control of the mansion house. He established a garden there as well. A 1798 account by the Duke de la Rochefoucault-Liancourt reveals that while the garden was beautiful, the "soil id very bad," causing some historians to question the agracultural productivity of the tract (see Lewis and Hardesty 1979:11).

As a consequence of financial insolvency Gillion was forced to sell the property in June of 1793. The property was initially conveyed to Florian Charles Mey, a former business partner of Gillion. Gillion, in turn, conveyed the property to Mrs. Mary Middleton. She, as the widow of Authur Middleton, had chosen Ashley Hill as the future residence of her daughter Ann and her husband Mr. Daniel Blake (Smith 1988:194).

On June 13, 1801, Ann and her husband, sold the Ashley Hill property to John Geddes. Geddes is known to have retained possession of Ashley Hill up to at least 1828. It was finally purchased in 1849 by Williams Middleton and incorporated into the Middleton Place family lands.

In 1865, during the occupation of Charleston, Union troops burned most of the plantation, Slave houses, suggested to have been located on the hill south of the mill pond (letter quoted in Lewis and Hardesty 1979:13), were spared. Following the Civil War, however, Middleton place sank into inactivity, and for several years and the tract was rented. It is suggested that by Lewis and Hardesty (1979) that by 1880 Williams Middleton deserted Middleton Place for the upstate, leaving the plantation in a state of relative inactivity. Williams died in 1883, leaving the plantation to his wife and two children (Figure 9).

The Charleston earthquake occurred on August 31, 1886, and caused extensive damage throughout the Dorchester and Charleston county area. Although there has been no concerted effort to review documents related to the earthquake, a tremendous amount of material has been generated by geologist from the period who reviewed the earthquake damage. At Middleton Place we know that the standing ruins of the main house and north dependency were brought down. In addition, the seismic activity caused the ponds to drain. A brief review of the notes of Earl Sloan reveal that he visited "Middleton Hall" (just west of the survey tract), finding walls "strained apart", and "cracks in the earth." He remarked that the "earth [was] severly disturbed [with] . . . vast numbers of craterlets some being yet active" (Peters and Herrman 1986:60).

In the twentieth century the property passed from Williams wife, Susan Pringle Middleton to her children, Henry and Elizabeth, in 1900. Henry sold his moitity to Elizabeth, who left the plantation to her husband Julius H. Heyward until his death or remarriage, at which time it would pass to her cousin, J.J. Pringle Smith. Heyward sold the property to Smith in 1916. Smith moved back to the plantation and began efforts to restore the tract. Major efforts apparently occurred in the 1930s (Lewis and Hardesty 1979:20).

Economics

As evidenced by the poor soils (Lewis and Hardesty 1979:11), it is doubtful that much crop cultivation took place at Ashley Hill. According to the Duke de la Rochefoucault Liancourt:

> The soil is sterile to such a degree that the Commodore [Gillion] was obliged to supply his table with culinary plants, and hisstable with fodder, from another plantation which he possessed three of four miles further distant (Smith 1988:193).

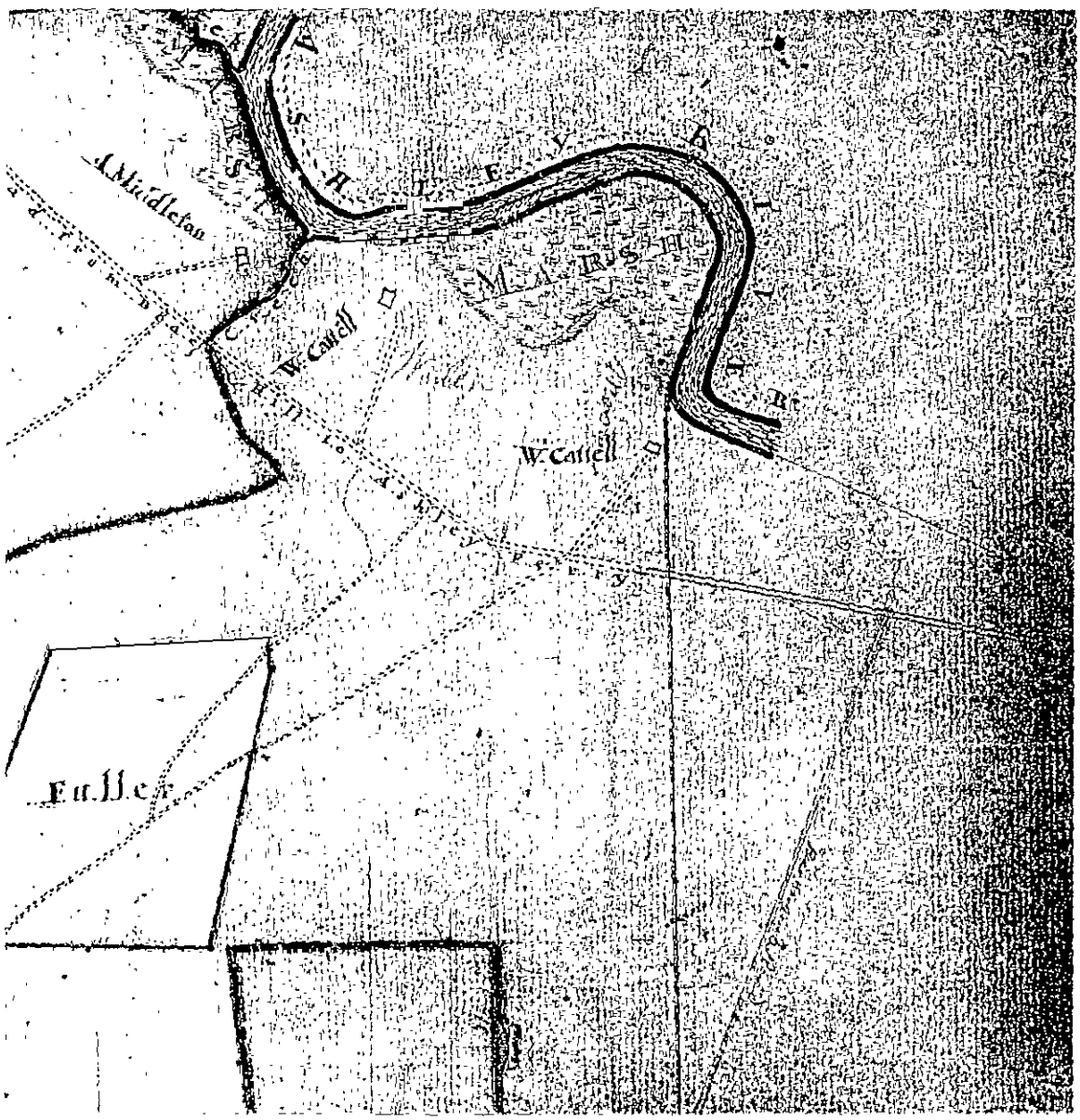

Figure 8. Ashley Hill Plantation ca. 1775. (courtesy of the Midleton Place Foundation).

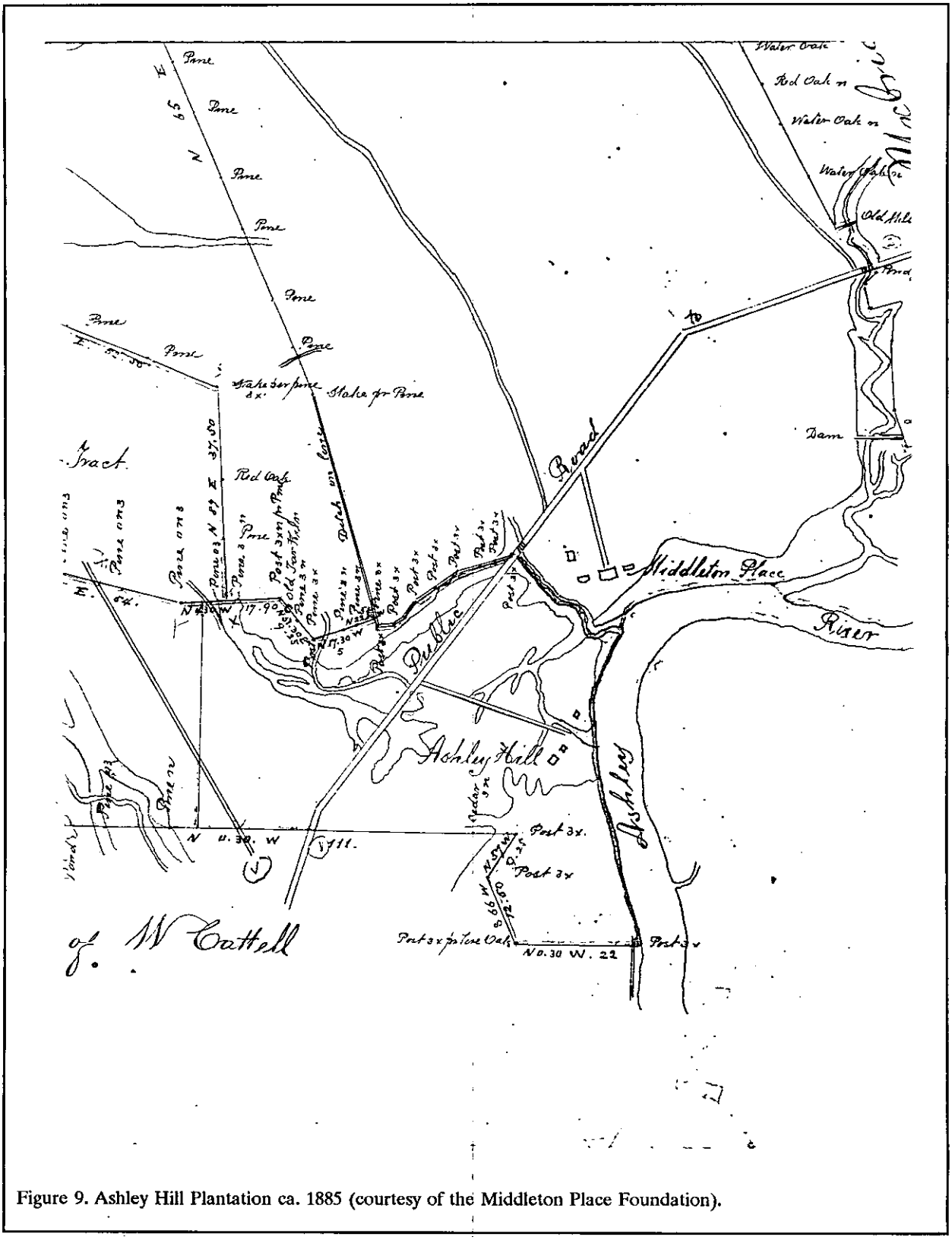

Figure 9. Ashley Hill Plantation ca. 1885 (courtesy of the Middleton Place Foundation).

The economic diversity found in South Carolina during the Colonial Period (Barr 1995, Terry 1981) probably allowed the Cattell family great latitude in their ability to make a profit from the Ashley Hill property. As early as 1682 cattle became established as a major Carolina export. Contemporary sources state that by that year some planters had herds containing at least 800 head (Craven 1970:357). Naval stores "were important commodities on early plantations" too (Terry 1981:80). It is suggested that the abundance of pine found in Carolina would "insure its future as a leading producer of naval stores" (Perry 1968:512, Terry 1981:81, Weir 1983:89, 43). Although the naval stores industry never achieved the economic status of rice (Terry 1981) naval stores was an important economic activity on the plantations of low country South Carolina (Barr 1996:28-33). According to the Duke de la Rochefoucault Liancour:

> the number of old tar kilns remaining [at Ashley Hill in 1796] show also that in the earlier days there was a good deal of pine tar production" (Smith 1988:193).

Much of the influence of the naval stores industry is tied to bounties, established between 1705 and 1744 by England's parliament, designed to promote its production (Harmon and Snedeker 1993:101, Hart 1986:6). These bounties assisted in the large production values of naval stores shipped from the port of Charleston within the economic landscape of South Carolina (Terry 1981:81).

A number of archaeological studies were conducted on the physical remains of tar kilns found in North and South Carolina (Harmon and Snedeker 1993: Hart 1986: Smith and Greshem 1989). Unfortunately, with all the archaeological and historical data available, there are problems related to dating the physical remains of tar kilns. Conclusions reached by a number of archaeologists have provided information concerning the extent of the naval stores industry in the Carolina's.

Hart's study of tar kiln sites at Limerick Plantation bemoans a "lack of temporal information" (Hart 1986:14). Although Harmon and Snedeker agree that the "temporal placement of tar kilns is a major concern" (Harmon and Snedeker 1993:119, 121), they have established a general typology for colonial tar kilns (Harmon and Snedeker 1993:100-122; Smith and Gresham 1989:108).

The physical remains of tar kilns represent three types; early, middle, and late (Harmon and Snedeker 1993:121). Ethnographic data records that round kilns with single drains and pits were used prior to the late eighteenth century. Late eighteenth and early nineteenth century kilns were round with multiple drains and collection pits. Twentieth century kilns were rectangular or keyhole in shape (Harmon and Snedeker 1993:121). They suggest those found in South Carolina tend to predate the Civil War period. This date is suggested because of a reduction in tar and pitch production during the late eighteenth century (Harmon and Snedeker 1993:19).

They also suggest that an additional technique for dating kiln sites is "through [the] reconstruction of historic context and determining the relationship to archaeological sites" (Harmon and Snedeker 1993:19). It is believed that access routes to these tar kiln locations may be important determinants to age. Studies of tar kiln locations in the Francis Marion National Forest and their accessability to colonial transportation routes have discovered a direct corralation between the two. Of 13 tar kilns recovered 12, or 92%, are within 1.2 miles of an overland transportation route and only 2.5 miles from river access (Barr 1996:34). The location of probable tar kiln locations along the Ashley River were most likely affected by accessability to Colonial Period overland transportation routes and navigable streams.

During the antebellum period, Williams Middleton, saw a great deal of change as "as result of the economic effects of the Civil War and the abolition of slavery" (Lewis and Hardesty 1979:18).

Rice production, a staple crop of Carolina low country economics, fell off dramatically. According to the 1850 census, Middleton Place produced approximately 45,000 pounds of rice annually. Yet according to the 1870 there was no

rice produced on the plantation at all. Only small amounts of cotton and corn were reported that year (Lewis and Hardesty 1979:18).

In an effort to recoup some income from his lands Williams Middleton, in 1868, became a partner in the Ashley Mining and Phosphate Company. In 1871 "four tracts of Ashley River property was leased for phosphate mining" (Lewis and Hardesty 1979:19). One of these parcels was the Ashley Hill north tract. Initially much of the mining activities took place invested in commercially mined phosphate production.

Phosphate rocks in South Carolina were recognized by chemists and geologists at least as early as 1797, although their economic importance was ignored, blunted prior to the Civil War, as one observer explained, by "a state of agricultural prosperity" (Guerard 1884:1). In fact, it was only when the economy of the low country lay in ruins that the phosphate was explored. As Shick and Doyle argue, phosphate mining allowed "the upper class of planters and factors in the Charleston area ... to shore up a slightly replica of the social order that had defended in the late war" (Shick and Doyle 1985:31). Just as to the point they argue that:

> [i]n the grand mansions of the city the upper class of old families continued to hold sway despite some disturbing signs of genteel poverty in flaking paint and pawned silver. The older leaders of this "ancient city" developed a fiercely conservative resistance to things new and came to see the lack of growth as a blessing that allowed them to preserve a special heritage with its roots in the old order of antebellum times (Shick and Doyle 1985:30).

Phosphate allowed economic activity, but without any real growth. It allowed the blacks to be engaged in productive activity, but without allowing any great deal of true freedom. And, like rice and cotton before it, phosphate was pre-destined to destroy the land and result in eventual economic collapse.

Phosphates, used as fertilizers, were found as deposits in beds or strata of rough nodules "from part of an inch to several feet in diameter," often associated with fossil bones. The strata was typically 6 to 20 inches in depth and was found up to eight feet below the modern surface. The nodules were also found in creeks and, according to Guerard, "on the low lands which form a belt of country running parallel to the Atlantic and from 10 to 50 miles from the seaboard" (Guerard 1884:4).

In the post-war rush to find some new system to bolster the economy and put blacks back to work, however, none of the problems potentially associated with phosphates were considered significant. A number of phosphate companies were organized to excavate the rock. The first company organized to excavate the rock, in 1867, was the Charleston, S.C. Mining and Manufacturing Company, formed with $1 million in northern capital (when South Carolinians were unwilling to back the venture). Local Carolina companies were quick to follow (Lewis and Hardesty 1979:19).

The phosphate industry in South Carolina eventually fell victim to forces much larger, and more powerful, than imagined by the investors — resembling the events associated with cotton and rice. The rapid decline in South Carolina was largely the result of new strikes in Florida during the 1880s, strikes in the 1890s in Middle Tennessee, and eventually the discovery of deposits in Algiers. At the same time, internal problems such as political conflict (including exceptionally unsuccessful efforts by South Carolina to regulate the industry), natural disasters, and the decisive role of the northern capitalists all contributed to the fall of the phosphate industry. Land mining of phosphate continued into the 1920s, but at a declining scale. Not even mergers such as the Virginia-Carolina Company's purchase of the S.C. Mining and Manufacturing Company with its infusion of $48 million in capital was able to keep the industry viable in South Carolina.

Land phosphates were mined in a process

not dissimilar to strip mining seen today. One account explains that once

> "a field is selected [it is] drained by means of trenches, technically known as "line pits," dug around the tract and reaching below the level of the rock bed, this field is about 600 yards wide, and made as log as possible for transportation of the dug rock. A tram road for horses, or stream, is constructed through the midst of the field in its length, and then, commencing at the "line pits" and working in toward the tram, pits measuring 6 by 12 feet, are sunk in long parallel lines. The superincumbant earth is thrown up with shovels behind the men, and the phosphate rock dug out with picks and cast on the untouched ground on front. When trees are in the field they are undermined and thrown over on the side which has already been excavated. The rock is rolled from the pits in barrows and dumped on platforms on the roadside, whence it is loaded into cars for transport to the washers (Guerard 1884:6).

Consistent in all the descriptions is the incredible amount of destruction caused by the mining process. H.A.M. Smith's discussions of the Cripps plantation, some five miles south of Middleton Place, may offer some additional insight:

> [w]hen the writer in 1885 visited the site of his residence the house had been destroyed. It was on a spot of considerable natural beauty with a grove of fine live oaks, and ground laid out and planted with groups of the Indian Azalea which were then in full bloom. The property was then owned by the Rose phosphate mining company and unfortunately the line of mine excavation lay directly across the old garden and the site of the old house which were then on the point of total destruction by the mining operations (Smith 1988:166).

An 1897 report by the Charleston, S.C. Mining and Manufacturing Company details their specific operations. It reveals an "average overburden of some five feet" on their Ashley River properties, with a phosphate rock strata "from twelve to fifteen inches in thickness." The study also reports some attempts to use steam dredges to remove the overburden, "in that part of the fields where the overburden is deepest" (Report of the Visiting Committee of the Board of Directors of the Charleston, S.C. Mining and Manufacturing Company, South Carolina Historical Society, 30/13/47).

It seems likely, although not conclusively documented, that phosphate mining operations significantly altered the Ashley Hill north study tract. While the excavation of various drainage ditches would not have caused great damage, clearly the excavation of the rock would result in the near total destruction of any archaeological materials present. Areas subjected to mining may show occasional remnants, such as pottery, ceramics, and brick, but are not likely to yield any in situ materials. Mine areas will generably be recognizable through the presence of the drainage system or through disturbed soil profiles.

FIELD SURVEY AND RESULTS

Field Methodology

The proposed field techniques involved the excavation of shovel tests at 100 feet intervals on transects spaced 100 feet apart on those areas which exhibited high, well drained soils. Since there were no areas of poorly drained soils, except in the central drainage, we did not anticipate any situations where the shovel testing interval would be increased to a greater distance.

As previously discussed, the goals of this survey were to:

- locate historical and archaenlogical remains which may exist on the tract, and
- to determine how deep disturbances in the area are and the likelihood that they may have affected cultural resources.

All soil would be screened through ¼-inch mesh, with each test numbered sequentially. Each test would measure about 1 foot square and would normally be taken to subsoil. All cultural remains would be bagged by provenience, with the exception of brick, mortar, and shell, which would be noted and discarded in the field. Notes would be maintained for profiles at any sites encountered.

The information required for the completion of South Carolina Institute of Archaeology and Anthropology site forms would be collected and photographs would be taken, if warranted in the opinion of the field director. For this survey, an archaeological site was defined as three or more artifacts within a 200 foot area. Modern garbage (dating to the last 50 years) was generally disregarded unless associated with earlier remains.

A total of 14 transects were shovel tested (Figure 10). All were spaced 100 feet apart, with shovel tests excavated every 100 feet. The majority of the survey tract was relatively open, allowing the examination of the ground surface during testing. The only exceptions were the wooded areas along Rice Mill Creek to the north and those associated with the drainage. The majority of the tract consisted of pasture and fenced corrals for horses.

A total of 128 shovel test stations were examined. A total of 107 or 84% of the shovel test stations were excavated in the survey tract. The remaining 21 shovel test stations fell in areas containing standing water, marsh, and slope over 10%.

Laboratory Methodology

The cleaning and cataloging of artifacts was conducted at the Chicora laboratories in Columbia. All items were assessed for conservation needs during this processing. No items were encountered which warranted conservation and all items were either curated in their current condition or were drawn and discarded (as noted in the specimen catalogs).

Analysis of the collections followed those professionally accepted standards with a level of intensity suitable to the quantity and quality of the remains. Prehistoric pottery was classified using common coastal South Carolina typologies (DePratter 1979, Trinkley 1983). The temporal, cultural, and typological classifications of the historic remains follow Nöel Hume (1970), Miller (1980, 1991), Price (1970), and South (1977).

Results of the Survey

One site and one feature were observed during the Ashley Hill north tract survey. Neither are recommended as eligible under the criterion established for nomination to the National Register of Historic Places.

As a result of the archaeological survey of the Ashley Hill north tract, only one site

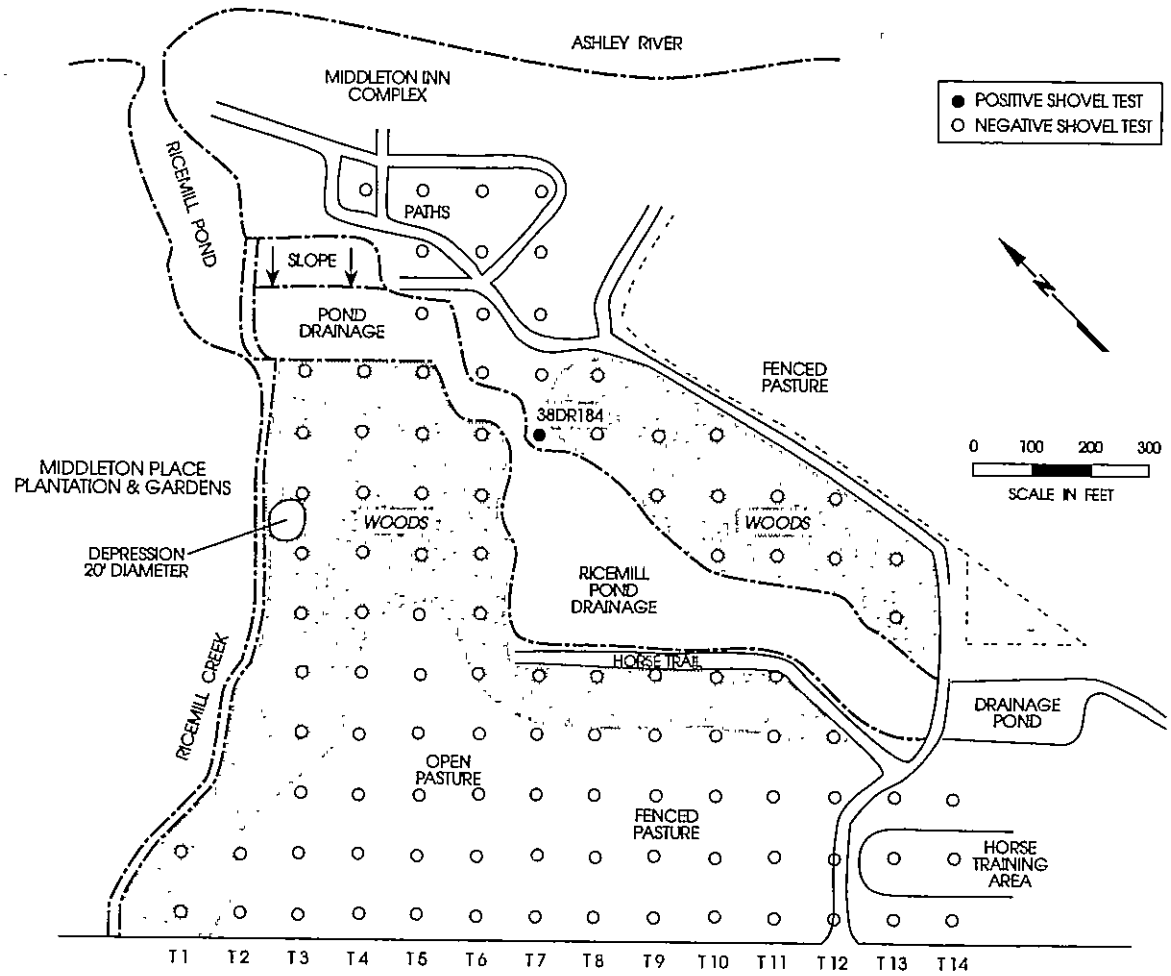

Figure 10. Ashley Hill north tract survey: transects, shovel test locations, and identified site (38DR184).

(38DR184) was identified (see Figure 10). As well, one depression was observed.

The archaeological site identified was primarily evaluated for its potential National Register eligibility under Criterion D: the site has yielded, or may be likely to yield, information important in prehistory or history. Obviously such an approach requires that the property must have information which can contribute to our understanding of the past and that the information be significant (i.e., that it is able to address important research questions). It is not necessary that the information be unique, nor is it necessary that the information be controversial or challange orthodox position. As Townsend et al. (1993:31) clearly indicate, it is sufficient that the information reinforces previously gathered information. There is an implicit assumption that such rienforcement derives from additional tests of archaeological theories, and that such tests are necessary, even essential, part of "doing " science. Failure to contentiously test, and refine, archaeological theories and perspectives will result in a stagnant discipline, or alternatively, a discipline where research is equated with the most recent intellectual fad.

In order to evaluate eligibility, we have adopted the approach suggested by Townsend et al (1993:32), which involves five steps:

- The sites data sets are identified (these may include ceramics, lithics, floral or faunal material, architectural remains, radiocarbon material, or a wide range of other catagories of information;
- the historic context of the site is identified, providing a framework for evaluation;
- important research questions which the site's data sets can address are identified;
- the data sets are evaluated in terms of archaeological integrity (i.e., are the data sets sufficiently well preserved to address the research questions); and
- the information is evaluated in terms of its importance (i.e., how will it contribute to the archaeological context).

Since the approach outlined is intended to be used to provide suporting documentation to National Register nominations, not the review of a large number of archaeological sites, we have operationalized the approach by combining sets and making the process more appropriate for survey level review. For example, the archaeological and historic context has been largely developed in the preceeding discussions of archaeology and history along the Ashley River. Further, we have emphasized only those research questions which we believe are important in relation to these archaeological and historic contexts, reducing the need to justify research questions in each site discussion.

Site 38DR184 is a subsurface historic deposit. The central UTM coordinates are N3640161 E581030. The site is located on a heavy ridge slope which alternately drops from a 2% slope to a 30% slope into a draining of Rice Mill Creek approximately 130 feet to the west. The nearest source of permanent water is Rice Mill Creek approximately 480 feet to the north. The elevation of the site is about 23 feet (AMSL) and based on shovel testing the site is estimated to measure 3 feet square. Shovel testing yielded a total of three artifacts.

Vegetation at the site consisted of a oak overstory with a mixed oak and pine understory. Surface visibility was poor and no artifacts were collected during testing. The site was initially encountered during routine shovel testing with the recovery of one delft ceramic, one brick fragment and one fragment of window glass from ST9 on Transect 7. Eight additional shovel tests were excavated in cardinal directions from the initial positive shovel test (N200E200). All exceeded 1.5 feet and soil profiles exhibited a black (10YR 2/1)

loamy sand. No additional artifacts were recovered.

The artifacts recovered during testing indicate a domestic site originating sometime in the early to mid-eighteenth century and extending into the twentieth century. The deft ceramic contains a date range from 1640 to 1800 with a mean date of 1720.[1] The window glass would date to the twentieth century. The lack of statrigraphic integrity throughout the site would indicate that these remains are the result of secondary deposition. Consequently, site 38DR184 is recommended as not eligible for inclusion on the National Register of Historic Places.

The observed depression was located due west of ST8 on T3. The central UTM coordinates are N3640200 E580910. The depression is located on a ridge slope which has an angle of 2 to 4%. Rice Mill Creek, the nearest source of permanent water lies about 100 feet to the north and the drainage for Rice Mill Creek lies approximately 200 feet to the east. The elevation of the site is about 25 feet (AMSL). From empirical evidence the depression is estimated to measure approximately 20 feet in diameter and approximately 2.5 to 3 feet in depth. Although no shovel testing was conducted in the depression, ST8 on T3 fell just east of the depressions edge (see Figure 10). No artifacts were recovered during shovel testing.

Vegetation at the site consisted of a oak overstory with a mixed hardwood understory. Surface visibility was poor and no artifacts were collected. The site was initially encountered during routine shovel testing and no additional shovel test were excavated.

Although this site exhibits the dimensions for the central drainage pit for colonial period tar kilns, no other features i.e. an outer ring or drainage trough, were observed during the survey. Consequently, this feature was considered an anomaly and not recorded other than its mention in this report.

[1]According to Terry (1981:290) delftware did not appear in probate inventories for Berkeley Parish until 1740. This would adjust the mean ceramic date range for delft in South Carolina from 1740 to 1800 which would allow a mean date of 1770.

CONCLUSIONS

Cultural Resources Evaluation

The primary goals of this study were twofold. One was to identify and assess cultural resources which might be present on the Ashley Hill north tract. The second was to determine how disturbances, from historically known landscape modifications, may have affected any cultural resources remaining on the tract. This research is intended to collect sufficient information on the Ashley Hill north tract to allow the State Historic Preservation Office to make a determination of the sites eligibility for inclusion on the National Register of Historic Places.

First and foremost, this study provides detailed information on the data sets present at 38DR184. We have determined that the site includes a small assemblage of mid-eighteenth to mid-twentieth century artifacts. The earlier artifacts are only composed of ceramics, whereas the latter artifacts are only composed of window glass.

Second, the **Background Research** provides an overview for the historic context for the site. Probably the most important aspect is that we know very little about land usage for the Ashley Hill north tract. This work found that the parcel was obtained very early during the colonial period by John Cattell. That over the years the Ashley Hill property was owned by several families, including the Middleton family which acquired the tract twice. The main plantation settlement was consistently located in the area which is today private outparcels. It is suggested that a slave village may have existed along the bluff overlooking Rice Mill creek. Neither the 1775 plat of the property or the 1885 plat show any structures on the Ashley Hill north tract. There are no archaeological remains which would indicate the presence of an early slave settlement situated along the north edge of the survey tract.

All indications point to Ashley Hill plantation as being crop poor but rich in pine and mineral wealth. Early in the colonial period the pine lands of Ashley Hill were used for the production of naval stores. A number of tar kilns were located on the property prior to 1796 (Smith 1988:193). The presence of a viable naval stores industry at Ashley Hill plantation may be evident today by the complete lack of any mature pines on the survey tract.

The early naval stores industry was very destructive, resulting the decimation of entire regions of pine forest. The subsequent logging actives which accompany this industry has been shown to be a major cause in the loss of topsoil in the southeastern United States (Trimble 1974:25).

The Civil War brought dramatic changes to the Ashley River District as well as to Ashley Hill plantation. Shortly after the war Williams Middleton took advantage of the phosphate deposits found at Ashley Hill. Informant interviews suggest that a tram existed on the property for the removal of phosphate. This is today the main drive of Middleton Inn and runs north-south along the ridge just above the Rice Mill Creek drainage. The tramway may have been used in conjunction with the mid to late nineteenth century phosphate dock at Drayton Hall or the phosphate dock located at the western landing of Ashley Ferry.

As described earlier, phosphate mining activities, depending on the size of the deposit, were highly destructive. Often going as deep as 1.5 or more feet these deposits could be as wide as 600 yards. With a centralized tramway, the fields could conceivably stretch 300 yards to either side. This would effectively cover the entire survey tract.

Thus, a whole range of questions are possible based on the sites context as a well established plantation whose land use patterns

evolved over time. What was the primary function of the Ashley Hill north tract? Was the plantation only used for the extraction of products associated with the naval stores and phosphate industry? Were main or ancillary structures constructed within the project area. As it is, a number of these questions can be explored by comparing land use patterns found at other low country Ashley River plantations — do the land use patterns found at Ashley Hill mirror those found at Drayton Hall or Middleton Place? It also might be appropriate to explore the placement and range of building types at a plantation such as Middleton Place.

These are important, and worthwhile, questions which would help us better understand evolving land use patterns found along the Ashley River. They would help us better account for the differences we sometimes see in the historical record.

Yet, these questions must be evaluated in terms of the data set's ability to address them. In other words, significant questions are, at times, easier to develop than it is to find data sets with the ability (or integrity) to answer those questions.

In the case of 38DR184, there are lingering, and serious concerns about integrity. If the site is to be eligible for inclusion on the National Register under Criterion D (i.e., a site that has yielded, or may able to yield, information important to history), then we must be especially concerned with location, design, materials, and associative integrity.

Archaeological site 38DR184 does not possess locational integrity. The presence of disturbed soils assists in addressing issues related to the deposition of cultural artifacts. It is obvious from soil profiles recovered during the survey that the project area has undergone a great deal of landscape modification. This modification seems to be primarily in the form of activities associated with clear cutting and strip mining and the construction of the Middleton Inn complex and horse stables.

As discussed in the **Natural Environment** section, according to the United States Soil Conservation Service, four individual soil series occur in the project area. Although difficult to tell from a limited series of test units, it is evident that all of the soils on the Ashley Hill north tract exhibit some form of deflation and/or disturbance. The soils associated with the Middleton Inn main complex show the least amount of deflation, approximately only 0.4 foot. The Wando series in this area generally contains subsoil from 0.7 foot to 4.6 feet in depth. It is doubtful that phosphate mining activities would have removed all subsoil from this area. Clearing, grubbing, and soil preparation for the construction of Middleton Inn would not have removed this subsoil either. It is probable that the A horizon found at the Middleton Inn main complex was brought in after construction of the housing units and ancillary buildings was complete.

The Wando soils in the western portion of the survey tract also show a great deal of disturbance. As stated earlier, many of the test units in this area would indicate that the soils had been inverted. This would support informant interviews that the pastures and horse pens have been built up over the years through the addition of new soils along with grading and plowing for grass seed.

The Leon and Seabrook soils, found primarily within the central drainage area, tend to exhibit characteristics associated with depositional factors. These soils exhibit an A horizon which exceeds the profile for the Seabrook and Leon series by approximately 1.6 feet. These soils are found along the edges of the drainage bed down slope from the main north-south ridge.

The Lakeland series soils, which dominate the slope overlooking Rice Mill Creek to the north, exhibit depositional characteristics similar to that found in the central drainage. This area has been left to reforest itself in the west, whereas the eastern portion is used as flower beds for Azaleas. The soils in this area exhibit a profile which exceeds the general A horizon for Lakeland soils by 1.4 feet.

Elements of design include organization of space, proportion, scale, technology,

ornamentation, and materials. Site 38DR184 evidences much less integrity of design, with the primary disturbance coming in two forms. One is the major landscape adaptations resulting from phosphate mining. The second is from the construction of the Middleton Inn complex and associated pastures, stables, and barns. Both of these occupations have seriously affected the site's inter-site patterning, making it very difficult, if not impossible, to distinguish more than one structural area.

Materials include the physical items that were deposited during the period of the sites use which form particular patterns or configurations. Integrity of materials is typically discussed in the context of intrusive artifacts, the completeness of the artifact and feature assemblages, and the preservation of features themselves. We must acknowledge that in this area as well, 38DR184 exhibits generally low integrity. Although we have identified a clear subsurface deposit, we have been unable to identify any historic features. There are no concentrations of brick rubble, other than that used to build up the roads for the Middleton Inn complex, no trash pits, and a considerable lack of cultural remains.

Integrity of association is that direct link between the historic event and the property. It is often evaluated, for historic archaeological sites, in the context of the site's data sets and research questions. For example, it often requires a well stratified site to address chronological questions of change and adaptation. At 38DR184, it would require distinct structural areas, with an associated artifact assemblage, in order to explore plantation land use patterns. Although these may have existed at one time, the association has been compromised by the phosphate mining operations and construction of the Middleton Inn complex.

Based on this review of site integrity, we conclude that the site is not likely to be able to satisfactorily address the important research questions we have outlined. Therefore, we recommend the site as not eligible for inclusion on the National Register.

The one observed feature, a circular depression, is similar in size and shape to the central depression found in pre-nineteenth century tar kilns. Other than the central depression no other evidence of an associated outer ring or drainage trough were found. Shovel tests located on the northeastern edge of the ring failed to yield any data. No surface artifacts were observed or recovered. This feature is considered an anomaly to the survey tract. Due to obvious landscape modifications on the Ashley Hill north tract, it is doubtful that any evidence of naval stores production would still be present in the project area.

SOURCES CITED

Allston, R.F.W.
1854 *Essays on Sea Coast Crops.* A.E. Miller, Charleston.

Amer, Christopher F., William B. Barr, David V. Beard, Elizabeth Collins, Lynn B. Harris, William R. Judd, Carl A. Naylor, and Mark M. Newell
1993 *The Malcolm Boat (38CH803): Discovery, Stabilization, Excavation, and Preservation of an Historic Sea Going Small Craft in the Ashley River, Charleston County, South Carolina.* Research Manuscript Series 217. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Anderson David G., Kenneth E. Sassaman, and Christopher Judge, editors
1992 *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective.* Council of South Carolina Professional Archaeologists, Columbia.

Barker, Donnie B.
1993 *Ground-Penetrating Radar Survey at Old Dorchester State Park (38DR3), Dorchester County, and Charles Towne Landing (38CH1), Charleston County, South Carolina.* Research Series 5. South Carolina Department of Parks, Recreation, and Tourism, Columbia

Barr, William B.
1995 Childsbury Towne and Ashley Ferry Town: Elements of Control in the Economic Landscape of Colonial South Carolina. In *Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference 1995*, edited by Paul Forsythe Johnson, pp. 88-93, Washington D.C.

1996 *Strawberry Ferry and Childsbury Towne: An Economic Enterprise along the Western Branch of the Cooper River, St. John's Parish, Berkeley County, South Carolina.* South Carolina Research Manuscript Series 224. South Carolina Institute of Archaeology and Anthropology, University of South Carolina.

Bense, Judith A.
1994 *Archaeology of the Southeastern United States: Paleoindian to World War I.* Academic Press, New York

Brooks, Mark J., Larry Lepionka, Ted A. Rathbun, and John Golsborough
1982 *Preliminary Archaeological Investigations at the Callawassie Island Burial Mound (38BU19), Beaufort County, South Carolina.* Research Manuscript Series 185. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Butler, C.S.
1994 Draft Report, Archaeological Survey and Testing of the Martschink Development Trust, Secessionville, Charleston County, South Carolina. Brockington and Associates, Atlanta.

Coe, Joffre L.
1964 *The Formative Cultures of the*

Carolina Piedmont. Transaction of the American Philosophical Society 54(5).

Cooke, C. Wythe
1936 *Geology of the Coastal Plain of South Carolina.* Bulletin 867. U.S. .Geological Survey, Washington, D.C.

Craven, Wesley F.
1970 *The Southern Colonies in the Seventeenth Century 1607 - 1689.* Louisiana State University Press, Baton Rouge.

DePratter, Chester
1979 Ceramics.. In *The Anthropology of St. Catherines Island 2. The Refuge-Deptford Mortuary Complex,* edited by David Hurst Thomas and Clark Spencer Larsen, pp. 109-132. Anthropological Papers 56(1). The American Museum of Natural History, New York.

Derting, Keith M., Sharon L. Pekrule, and Charles J. Rinehart
1991 *A Comprehensive Bibliography of South Carolina Archaeology.* Research Manuscript Series 211. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Edgar, Walter B. (editor)
1972 *The Letterbook of Robert Pringle.* 2 vols. University of South Carolina Press, Columbia.

Fraser, Walter J., Jr.
1989 *Charleston! Charleston! The History of a Southern City.* University of South Carolina Press, Columbia.

Guerard, A.R.
1884 *A Sketch of the History, Origin and Development of the South Carolina Phosphates.* Walker, Evans and Cogswell, Charleston, South Carolina.

Hammond, Henry
1884 Report on Cotton Production of the State of South Carolina. In *Report on the Cotton Production in the United States,* edited by Eugene W. Hilgard, pp. 451-526. Census Office, Department of the Interior, Washington, D.C.

Harmon Michael A. and Rodney J. Snedeker
1993 The Archaeological Record of Tar and Pitch Production in Coastal Carolina. In *Historic Landscapes in South Carolina: Historical Archaeological Perspectives of the Land and Its People,* edited by Linda F. Stine, Lesley M. Drucker, Martha Zierden, and Christopher Judge. Council of South Carolina Professional Archaeologists, Columbia.

Hart, Linda P.
1986 *Excavations at the Limerick Tar Kiln Site - 38BK472.* Cultural Resource Management Report 86-52.

Harris, Lynn B.
1996 *A Survey of Submerged Cultural Resources in the Ashley River, Dorchester County, South Carolina.*South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Hilliard, Sam B.
1984 *Atlas of Antebellum Southern Agriculture.* Louisiana State University, Baton Rouge.

Kjerfve, Bjorn
1975 Climatology of Kiawah Island. In *Environmental Inventory of Kiawah Island,* edited by William M.

Campbell and John Mark Dean, pp. C-1 - C-34. Environmental Research Center, Inc., Columbia.

Lefler, Hugh T. (editor)
1967 *Lawson's A New Voyage to Carolina.* University of North Carolina Press, Chapel Hill.

Lepionka, Larry, Donald Colquhoun, Rochelle Marrinan, David McCollum, Mark Brooks, John Foss, William Abbot, and Ramona Grunden.
1983 *The Second Refuge Site, Location 22 (38JA61), Savannah National Wildlife Refuge, Jasper County, South Carolina.* University of South Carolina, Beaufort. Submitted to National Perk Service, Inter-agency Archaeological Services, Atlanta.

Lewis, Kenneth E. and Donald B. Hardesty
1979 Middleton Place: Initial Archaeological Investigations at an Ashley River Rice Plantation. Research Series 148. The South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Matthews, Thomas D., Frank W. Stapor, Jr., Charles R. Richter, John V. Miglarese, Michael D. McKenzie, and Lee R. Barclay
1980 *Ecological Characterization of the Sea Island Coastal Region of South Carolina and Georgia*, vol. 1. Office of Biological Services, Fish and Wildlife Service, Washington, D.C.

Michie, James L.
1977 *Early Man in South Carolina.* Honor's Thesis, Department of Anthropology, University of South Carolina.

Miller, E.N.
1971 *Soil Survey of Charleston County.* United States Department of Agriculture. Soil Conservation Service, Washington, D.C.

Miller,
1991 A Revised Set of CC Values for Classification and Economic Scaling of English Ceramics from 1787 to 1880. *Historical Archaeology* 25:1-25.

1980 Classification and Economic Scaling of 19th Century Ceramics. *Historical Archaeology* 14:1-40.

Mills,
1972 [1826] *Statistics of South Carolina.* Reprinted. The Reprint Press, Spartenburg, South Carolina. Originally published 1826, Hurlburt and Lloyd, Charleston.

Nöel Hume, Ivor
1970 *A Guide to Artifacts of Colonial America.* Alfred A. Knopf, New York.

Perry, Percival
1968 The Naval Stores Industry in the Old South 1790 - 1860. In *Journal of Southern History*, 34:509-526.

Peters, Kenneth E. and Robert B. Herman, editors
1986 *First Hand Observations of the Charleston Earthquake of August 31, 1886, and other Earthquake Materials.* Bulletin 41. South Carolina Geological Survey, Columbia.

Peterson, Drexel
1971 *Time and Settlement in the Archaeology of Groton Plantation, South Carolina.* Unpublished Ph. D. dissertation, Department of Anthropology, Harvard University, Cambridge.

Price, Cynthia
1979 *19th Century Ceramics in the Eastern Ozark Border Region.*

Monograph Series 1. Center for Archaeological Research, Southwest Missouri University, Springfield.

Rosen, Robert
1982 *A Short History of Charleston.* Lexikos, San Francisco.

Sandifer, Paul A., John V. Miglarese, Dales R. Calder, John J. Manzi, and Lee A. Barclay
1980 *Ecological Characterization of the Sea Island Coastal Region of SOuth Carolina and Georgia*, vol. 3. Office of Biological Services, Fish and Wildlife Service, Washington, D.C.

Sassaman Kenneth E. and David G. Anderson
1994 *Middle and Late Archaic Archaeological Records of SOuth Carolina: A Synthesis for Research and Resource Management.* Council of South Carolina Professional Archaeologists, Columbia.

Shick, Tom and Don Doyle
1985 The South Carolina Phosphate Boom and the Stillbirth of the New South, 1867-1920. *South Carolina Historical Magazine* 86:1-31.

Smith, Charlotte A. and Thomas H. Gresham
1989 *Cultural Resiurces Survey of Fiscal Year 1991 Timber Sales, Francis Marion Forest.* Southern Archaeological Services, Inc., Athens.

Smith, H.A.M
1913 Some Forgotton Towns in Lower South Carolina. In *South Carolina Historical and Genealogical Magazine* 14(4):198-203. South Carolina Historical Society, Charleston.

1919 The Ashley River: Its Seats and Settlements. *South Carolina Historical and Genealogical Magazine 20:5-51.*

1988 *Rivers and Regions of Early South Carolina: Articles from the South Carolina Historical (and Genealogical) Magazine.* The Reprint Company, Spartenburg.

South, Stanley
1972 *The Unabridged Version of "The Tribes of the Carolina Lowland."* Ms. on file, South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

1977 *Method and Theory in Historical Archaeology.* Academic Press, Orlando.

South, Stanley and Michael Hartley
1980 *Deep Water and High Ground: Seventeenth Century Low Country Settlement.* Research Manuscript Series 166. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Terry, George
1981 *"Champaign Country": A Social History of an Eighteenth Century Lowcountry Parish in South Carolina, St. Johns Berkeley County.* George D. Terry, Columbia.

Thomas David H. and Clark S. Larson,
1979 *The Anthropology of St. Catherines Island: The Refuge-Deptford Mortuary Complex.* Anthropological Papers 56(1). American Museum of Natural History, New York.

Townsend, Jan, John H. Sprinkle, Jr., and John Knoerl
1993 *Draft Guidelines for Evaluating and Registering Historical*

Archaeological Sites and Districts. Bulletin 36. National Park Service, National Register of Historic Places, Washington, D.C.

Trimble, Stanley Wayne
1974 *Man-Induced Soils Erosion on the Southern Peidmont 1700-1970.* Soil Conservation Society of America, Ankey, Iowa.

Trinkley, Michael
1980 *Investigations of the Woodland Period Along the South Carolina Coast.* Ph. D. dissertation. University of North Carolina at Chapel Hill. University Microfilms, Ann Arbor.

1981 *Studies of Three Woodland Period Sites in Beaufort County, South Carolina.* South Carolina Department of Highways and Public Transportation, Columbia.

1982 *A Summary Report of Excavations at Alligator Creek, Charleston County, South Carolina.* United States Department of Agriculture, Forest Service, Columbia.

1983 Ceramics of the Central South Carolina Coast. *South Carolina Antiquities* 15:43-53.

1993a A Brief Examination of the Middleton Place Mill, Middleton Place Plantation (38DR16): Phase One. Research Series 114. Chicora Foundation, Inc., Columbia.

1993b Monitoring Construction Activities at the Middleton Place Mill, 38DR16: Phase Two. Research Contribution 128. Chicora Foundation, Inc., Columbia.

Wilson, Homes H.
1982 *An Analysis of Skeletal Material from Bw°67, Brunswick County, North Carolina.* Unpublished MA thesis, Department of Anthropology, University of North Carolina, Chapel Hill.

Williams, Stephen B. (editor)
1968 *The Waring Papers: The Collected Works of Antonio J. Warring, Jr.* Papers of the Peabody Museum of Archaeology and Ethnology 58.

Weir, Robert
1983 *South Carolina: A History.* KTO Press, Millwood, New York.